



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,516	11/24/2003	Tadashi Matsumoto	Q78530	1958
23373	7590	03/07/2006	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			PARRIES, DRU M	
			ART UNIT	PAPER NUMBER
			2836	

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/718,516

Applicant(s)

MATSUMOTO ET AL.

Examiner

Dru M. Parries

Art Unit

2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 4-6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11-24-03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over David et al. (6,018,203), Bretz et al. (6,894,468), Piesinger (2004/0263147), and Kaku et al. (2003/0002590). David teaches a control system for canceling load unbalance of a three-phase circuit, comprising phase current detectors (16-20), phase change-over switches (22-30), a control center (12) that inherently includes a zero-phase current detector and a phase change-over slave station, and when a magnitude of the zero-phase current is larger than a predetermined value the control center/slave station outputs control signals to the switches to cancel the unbalance of the circuit (Col. 3, lines 64-67; Col. 4, lines 1-10; Fig. 1A). David fails to explicitly teach how the cancellation of the unbalance of the circuit occurs, and that the circuit is incorporated in between high and low voltage distribution lines, and the type of current sensor that is used. Bretz teaches that a current sensor could be a current transformer (Col. 16, lines 36-39). Piesinger teaches a method of canceling the unbalance of a three-phase circuit by moving a load from a heavily loaded phase (i.e. the phase with maximum current) to a more lightly loaded phase (i.e. the phase with minimum current) ([0003]). Kaku teaches a high voltage line (24-2) with various distribution transformers (24-3) branching off the high voltage line to supply voltage to loads on low voltage lines (24-4) ([0011]; Fig. 1). It would have been obvious to one of ordinary skill in

Art Unit: 2836

the art at the time of the invention to implement a current transformer into David's circuit as the current sensor since David was silent on what type of device it is, and Bretz teaches a working example. It also would have been obvious to one of ordinary skill in the art at the time of the invention to use Piesinger's method of canceling unbalance because it's the most efficient method and David was silent as to a specific method. It also would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate David's circuit into the high to low voltage distribution system since it will help the system eliminate unbalance on the high voltage line.

3. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over David et al. (6,018,203), Bretz et al. (6,894,468), Piesinger (2004/0263147), and Kaku et al. (2003/0002590) as applied to claim 1 above, and further in view of Ellermeyer (3,555,290).

David, Piesinger and Kaku teach a control system as described above. David fails to explicitly teach the configuration of the switches with only three inputs. Ellermeyer teaches a configuration of a switching unit (10 & 11) with three inputs (for the three phases) and a single output. It would have been obvious to one of ordinary skill in the art at the time of the invention to implement this switch design into David's invention because he was silent on a precise configuration and this one is known in the art to have worked. It also would have been obvious to one of ordinary skill in the art at the time of the invention to omit the fourth input to David's switches (i.e. NC) since it has been held that omission of an element and its function in a combination where the remaining elements perform the same functions as before involves only routine skill in the art. *In re Karlson*, 136 USPQ 184. Also, if a "non-connection" configuration

was needed, the switch in Ellermeyer (11) would be controlled to not make a connection to either input, therefore saving an extra switch/input.

#### ***Allowable Subject Matter***

4. Claims 4-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. These claims would be allowable because no art of record teaches or gives motivation to modify the David reference that would teach an over-current grounding relay malfunctioning after the phase change-over control wasn't performed in a specified amount of time, and having the control center outputting an alarm signal because of it.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dru M. Parries whose telephone number is (571) 272-8542. The examiner can normally be reached on Monday -Thursday from 8:00am to 5:00pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus, can be reached on 571-272-2800 x 36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

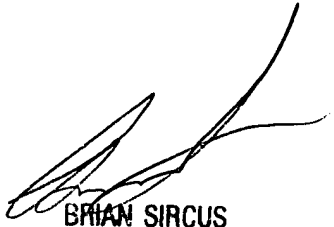
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

Art Unit: 2836

applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DMP

3-1-2006



BRIAN SIRCUS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800